

On The Need of Developing High-Altitude Drones (UAVs) for implementation of multi-band single and multiple pass differential POLinSAR Technology Towards in SITU Monitoring of Severe Environmental Stress Changes (Disasters)

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The ESA POLinSAR Workshop on “Applications of SAR Polarimetry and Polarimetric SAR Interferometry” is arranged at the ideal time for developing this urgently required platform technology for environmental stress-change and local-to-global conflict monitoring in air at lower to highest possible altitudes next to space. In this overview, reasons are provided on why we do need to place multi-modal, multi-band single and multiple pass POLinSAR monitoring platforms next to space and lower altitudes at highest possible altitudes. The questions “*on what POLinSAR monitoring can provide that POL-SAR and IN-SAR by themselves cannot accomplish*” is assessed; whereupon facts and justifications on developing Differential Repeat-Pass POL-IN-SAR platforms on high-altitude drones and/or UAVs are provided. Reasons for this technology becoming a basic requirement for current, near-future and much more so for future *all-day & night year’round* monitoring of severe abrupt environmental stress changes – such as earthquakes, typhoons, severe storms, landslides, floods, and so on - within the terrestrial covers are analyzed in view of the un-abating and uncontrollable terrestrial population explosion, which is going to continue on a global although not necessarily localized scale.